

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: JAMES C. KLEEWEIN ET AL.

Filed: 10/06/2004 Examiner: Jay A. Morrison

Title: *Transient Range Versioning Based On Redirection*

REPLY BRIEF

Attn: Board of Patent Appeals and Interferences
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Appeal Brief filed July 9, 2008, and the Examiner's Answer dated November 4, 2008, Applicants submit the following reply.

REMARKS

This Reply Brief is in response to the Examiner's Answer dated 11/4/2008. Reconsideration of this application is respectfully requested in view of the foregoing remarks. In addition, all of the arguments in the appeal brief of 7/9/2008, and prior responses should also be considered in support of the claimed elements provided in the present invention.

STATUS OF CLAIMS

Claims 1-25 were previously canceled.

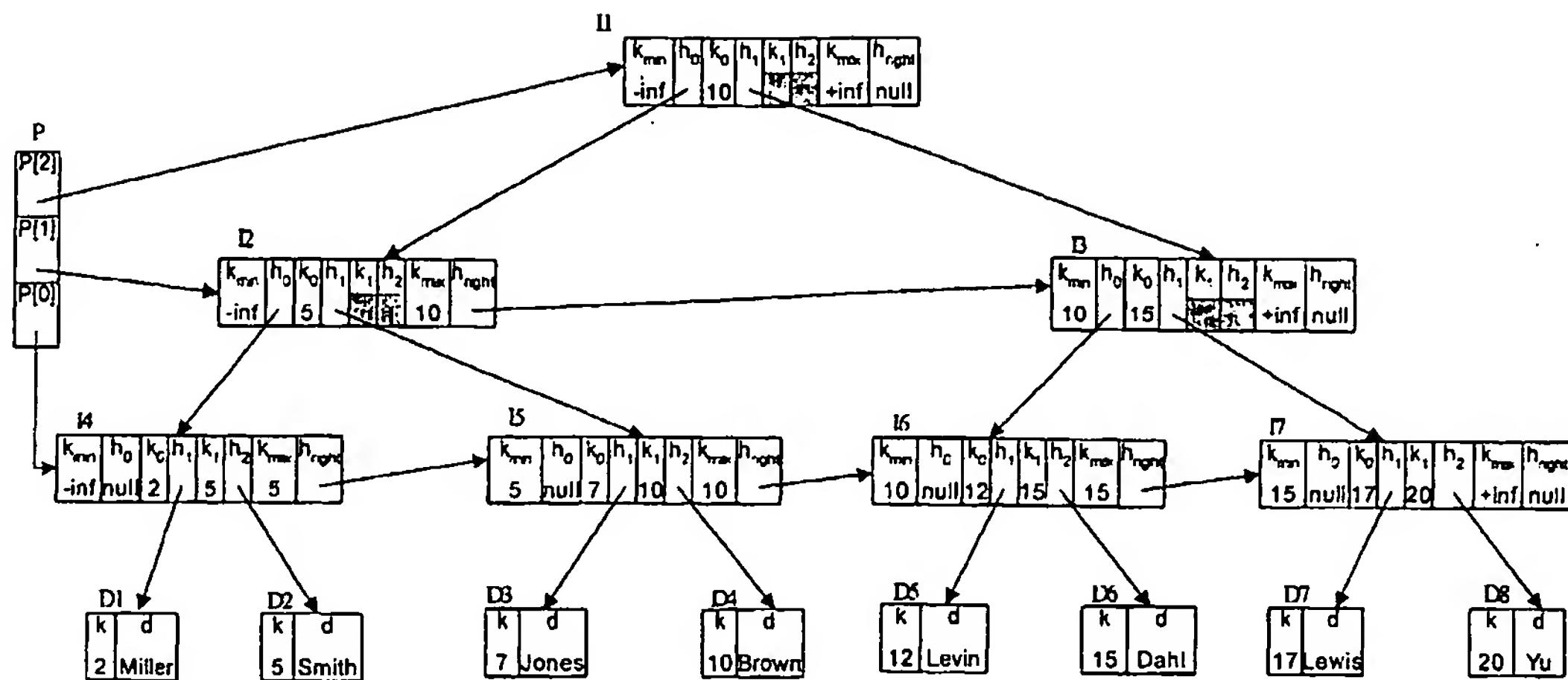
Claims 26-49 are pending.

Claims 26-32, 34-45 and 47-49 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ganesh et al. (U.S. Patent 6,957,236), hereafter "Ganesh" in view of Odom et al. (U.S. Patent 6,516,320), hereafter "Odom", and further in view of Najork et al. (U.S. Patent 7,007,027), hereafter "Najork".

Claims 33 and 46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ganesh in view of Odom, and further in view of Najork, and further in view of Chang et al. (U.S. 6,584,459), hereafter "Chang".

Claims 26-49 are hereby appealed.**RESPONSE TO EXAMINER'S ANSWER**

With respect to independent claim 26, the Examiner references column 2, lines 34-46 and FIG. 3C of Najork on page 16 of the Examiner's Answer stating that such a citation teaches the feature of a "storage architecture managing node ranges". FIG. 3C is provided below for the convenience of the Board of Patent Appeals and Interferences:

**FIG. 3C of Najork**

Applicants agree with the Examiner's assessment of FIG. 3C of Najork that it teaches "index nodes (I1-I7) and data nodes (D1-D8)". The Examiner further states that "the key values on either side of the pointer or link at every level of a B-tree define a range of nodes which lies beneath" (emphasis added). Applicants respectfully disagree with this statement as such a feature is not shown in Najork, or in any of the other cited references.

In FIG. 3C of Najork, I1 through I7 represent the index nodes and D1 through D8 represent the data nodes. Pointer h_0 in index node I2 is flanked on the left by $k_{min} = -inf$ and on the right by $k_0 = 5$. The Examiner is stating that index node I4 is limited by $k_{min} = -inf$ and $k_{max} = 5$. While this may be true from FIG. 3C, Applicants wish to point out that the range the Examiner is referring to is the range of values associated with the keys k (i.e., k_{min} through k_{max}). Applicants' claims, by stark contrast, refer to node ranges. Najork fails to teach any ranges of index nodes or the data nodes. Therefore, Applicants respectfully maintain that the Najork reference provides no teaching for a storage architecture that manages node ranges.

Further, in the recently filed Appeal Brief, it was expressly pointed out that the Examiner's own citations (i.e., column 2, lines 28-42 of Najork) in the Final Office Action of 08/20/2007 regarding the mention of a "key range of an index node". While the citation refers to a key range, it however makes no mention a "node range". Specifically, although Najork teaches various ranges for the keys, it fails to teach or suggest any ranges of index nodes or data nodes. Applicants respectfully maintain that a "key range" cannot be equated to a "node range".

Applicants once more emphasize that in the 'Response to Arguments' section of the Final Office Action of 03/03/2008 correctly interprets Applicants' ranges of nodes as "a set of nodes" that "form a range of node IDs called a node range". However, the Examiner has failed to show such a node range in Najork.

Under the same reasoning, Applicants also respectfully maintain that since the art of record (i.e., Ganesh, Odom, or Najork) fails to show a node range, it would be erroneous to assert that the art of record (i.e., Ganesh, Odom, or Najork) teaches the versioning a node range by copying, to a storage, a node range to which said node modification request is to be made and labeling said copied node range with an identifier. Applicants once more wish to emphasize that a mere mention of a key range does NOT teach or suggest the above-mentioned feature of versioning of a node range.

Under the same reasoning, Applicants also respectfully maintain that since the art of record (i.e., Ganesh, Odom, or Najork) fails to show a node range, it would be erroneous to

assert that the art of record (i.e., Ganesh, Odom, or Najork) teaches the feature of locating a labeled node range using an identifier, such as a timestamp or log sequence number, and a hash on a node range. Applicants once more wish to emphasize that a mere mention of a key range does NOT teach or suggest the above-mentioned feature of a hash on a node range, which is used to locate a labeled node range.

Absent such teachings, Ganesh, Odom, and Najork cannot render obvious Applicants' independent claim 26. Applicants, therefore, respectfully maintain that an improper 35 U.S.C. §103 rejection was issued with regards to pending claim 26.

Further, it was pointed out in the Appeal Brief that Applicants' independent claim 34 specifically clarifies that the storage architecture manages node ranges using a node id range index, with each node being assigned a node id value and a set of nodes forming a node range, and with each entry in the node id range index pointing to a node range and its range identifier, RID. Najork's key range, which merely defines a maximum and minimum value for the keys CANNOT be equated to a node range formed by a set of nodes. The Examiner has yet to show which set of data nodes or which set of index nodes is grouped in Najork to form sets of nodes forming node ranges. The Examiner has yet to show where in Najork is a teaching for versioning by shadowing nodes in a range to a version has table based on RID. Absent such showings, Ganesh, Odom, and Najork cannot render obvious Applicants' independent claim 34.

In the Examiner's Answer, the Examiner further states that the parameters of INCLUDE_TIME and EXCLUDE_TIME teaches claim 34's feature of "assigning a time identifier to copies of said range" and "locating a node in said shadowed range via said time identifier and RIDs". It was pointed out previously that INCLUDE TIME specifies the commit time of the most recently committed transaction and EXCLUDE TIME specifies the time at which the contents of the data block were "current". Nowhere in Najork is there a teaching for a parameter that is assigned copies of node range formed of a set of nodes, wherein a node within a range is identified using the same parameter. Absent such a showing, Ganesh, Odom, and Najork cannot render obvious Applicants' independent claim 34.

Arguments presented above with respect to independent claims 26 and 34 substantially apply to independent claims 48 and 49. At least for the reasons presented above, Applicants respectfully assert that Ganesh, Odom, and Najork cannot render obvious Applicants' independent claims 48 and 49. The arguments with regards to independent claims 26, 34, 48, and 49, as presented in both the previously submitted Appeal Brief and the current Reply Brief substantially apply to the dependent claims as they inherit all the features of the claim from which they depend.

Hence, at least for the reasons set forth in the previously submitted Appeal Brief and the currently submitted Reply Brief, Applicants respectfully submit that pending claims 26-49 were improperly rejected under 35 U.S.C. §103(a).

SUMMARY

None of the references, cited or applied, provide for the specific claimed details of applicants' presently claimed invention, nor renders them obvious. It is believed that this case is in condition for allowance and reconsideration thereof and early issuance is respectfully requested.

As this Reply Brief has been timely filed within the set period of response, no petition for extension of time or associated fee is required. However, the Commissioner is hereby authorized to charge any deficiencies in the fees provided to Deposit Account No. 09-0460.

Respectfully submitted,

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